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**NAVIGATION IMPROVEMENTS  
LIMITED REEVALUATION REPORT  
FALSE PASS, ALASKA**

March 2003

## SUMMARY

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This report reevaluates the authorized Federal project at False Pass, Alaska. The authorized project was a result of the findings from the *Final Interim Feasibility Report* of navigation improvements at False Pass, dated December 2000. This study is limited to the selection of the design vessel and entrance channel depth and affirmation of the Recommended Plan.

False Pass is located on the eastern shore of Unimak Island on a strait connecting the northern Pacific Ocean to the Bering Sea, approximately 1,050 km southwest of Anchorage. There is no protected moorage within the region of False Pass. Use of the unprotected moorage facilities at False Pass is high. Resident and transient vessels in the area are subject to damages while tying-up and rafting along unprotected docks. During frequent storm events vessels must scatter to semi-protected coves and beaches away from the docks and associated marine facilities to wait out the storms. During the off-season owners of resident vessels must take their vessels to other communities or pull their vessels onto the beach, risking damage and curtailing their operations in the fisheries. Large vessels transiting the passageway on their way to the Bering Sea or Bristol Bay fisheries are often forced to maneuver within the passageway while awaiting favorable tides and safe weather or go around Unimak Island. This leads to increased operating costs and opportunity costs of time for commercial and subsistence fishing. Economic growth and stability of the community is impeded. Lack of safe and adequate access to shore presents potentially life-threatening risks for the numerous users of the marine facilities.

The operating draft of the design vessel for the feasibility report was 4.27 m. Based on the finding of this reevaluation it was revised to 3.66 m. The findings of this report recommend changing of the entrance channel and maneuvering basin depths, from -6.1m and -5.8m to -5.8 and -5.2 m MLLW, respectively. The RECOMMENDED PLAN has a 2.4 ha mooring and maneuvering basin and a 0.9 ha entrance channel. It would provide protected moorage for 88 commercial fishing vessels ranging in length from 5.5 m to 30.5 m. During the summer fishing season the transient moorage space would be used by salmon vessels. During the winter fishing season the transient moorage space would be used by larger crab vessels.

The features of the RECOMMENDED PLAN that contribute to the Nation have a construction cost of \$13,005,000 (October 2002 price level), excluding \$12,000 for navigation aids. To determine a benefit to cost ratio the project cost was deflated to the price level of the economic analysis, October 1999. This provided an annual NED investment cost of \$958,000 including an annual operation and maintenance cost of \$54,000. Average annual NED benefits are \$1,164,000. The project's benefit to cost ratio is 1.2 with annual net benefits of \$206,000.

As local sponsor, the Aleutians East Borough would be required to pay the non-Federal share of the cost of construction of the general navigation features as specified by Section 101 of the Water Resources Development Act of 1986 (Public Law 99-662). This amount is estimated at \$1,914,000. The Borough must also pay the entire cost of some local NED features (including the mooring basin and float system) and betterments (breakwater causeway, sheetpile dock, and bridge). The non-Federal share of all costs of the project is \$7,094,000. The Federal share of the project is \$8,645,000, excluding \$12,000 for navigational aids. The U.S. Coast Guard would provide these navigation aids.

The fully funded cost of the NED plan escalated to the mid-point of construction is estimated as \$14,079,000. The fully funded cost of the RECOMMENDED PLAN is \$17,032,000 and includes locally funded betterments.

At the time of this report the sponsor was undecided of its commitment to construct the betterments. Therefore, the NED plan may be the constructed project.

#### **PERTINENT DATA**

<b>Authorized Project and Current Recommended Plan</b>					
	<b>Authorized Project<sup>a</sup></b>	<b>Current Estimate<sup>b</sup></b>	<b>Current Estimate<sup>c</sup></b>	<b>Difference<sup>d</sup></b>	<b>Reason for Difference</b>
	<b>(Oct 1999 Price Level)</b>	<b>(Oct 1999 Price Level)</b>	<b>(Oct 2002 Price Level)</b>		
NED Benefit Category					
Commercial salmon vessels	863,000	863,000			
Subsistence activities	48,000	48,000			
Crab vessel operation	<u>254,000</u>	<u>253,000</u>			
TOTAL NED BENEFITS	\$1,165,000	\$1,164,000		-\$1,000	Reoptimization of entrance channel due to different design vessel draft.
Project Cost					
General Navigation Features	10,426,000	9,956,000	10,559,000		
LERR (GNF)	170,000	187,000	198,000		
Aids to navigation	12,000	12,000	12,000		
Local Service Facilities	<u>2,239,000</u>	<u>2,120,000</u>	<u>2,248,000</u>		
	\$12,847,000	\$12,275,000	\$13,017,000	-\$572,000	Reduced project depth ( -6.1 to -5.8 m, MLLW).
NED Investment Cost (includes interest during construction)	\$13,699,000	\$13,088,000	\$13,778,000	-\$611,000	
Annual NED Investment Cost	\$1,000,000	\$958,000	913,000	-\$42,000	
Net NED Benefits	\$165,000	\$206,000	\$206,000	+\$41,000	
Benefit/Cost Ratio	1.2	1.2	1.2		

<sup>a</sup> Final Interim Feasibility Report with Environmental Assessment<sup>2</sup>, December 2000 assumptions: (1) Oct 1999 price level; (2) 50-year project life; (3) 6 5/8% interest.

<sup>b</sup> Current estimate deflated to the same price level as the latest approved economic analysis (Oct 1999) to determine net annual NED benefits and a BCR.

<sup>c</sup> Limited Reevaluation Report assumptions: (1) Oct 2002 price level; (2) 50-year project life; (3) 5 7/8% interest.

<sup>d</sup> Benefit and cost difference is between the authorized project cost and current estimate based on an Oct 1999 price level.

## PERTINENT DATA

### Recommended Plan

Basin		Breakwaters	
Area	2.1 ha	Design wave	1.8 m
Basin depth	-3.7, 5.2 m MLLW	Length, total	568 m
Entrance channel depth	-5.8 m MLLW	Crest elevation	4.0 m MLLW
Dredging volume		Crest width	2.4 m and 10 m
Entrance channel	32,000 m <sup>3</sup>	Rock volume	
Maneuvering basin	36,000 m <sup>3</sup>	Primary armor	22,700 m <sup>3</sup>
Mooring basin	<u>33,000 m<sup>3</sup></u>	Secondary (B) rock	15,600 m <sup>3</sup>
Total	101,000 m <sup>3</sup>	Core rock	23,800 m <sup>3</sup>
		Crushed gravel	700 m <sup>3</sup>
		Entrance channel slope armor	1,500 m <sup>3</sup>

### Project Cost<sup>a</sup>

Item	Federal (\$)	Non-federal (\$)	Total (\$)
General Navigation Features <sup>b</sup>	8,645,000	1,914,000	10,559,000
Local Service Facilities	—	2,248,000	2,248,000
LERR (GNF)	—	198,000	198,000
Navigation aids - U.S. Coast Guard	12,000	—	12,000
NED Project Cost	8,657,000	4,360,000	13,017,000
<b>TOTAL COST</b>			<b>13,017,000</b>
Betterments <sup>c</sup>	—	2,734,000	2,734,000
<b>TOTAL COST INCLUDING BETTERMENTS</b>	<b>8,657,000</b>	<b>7,094,000</b>	<b>15,751,000</b>
NED investment cost (includes interest during construction)			13,778,000
Annualized initial cost plus interest during construction			859,000
Annual NED maintenance cost			54,000
Total average annual NED cost			913,000
Average annual NED benefits <sup>d</sup>			1,164,000
Net annual NED benefits <sup>d</sup>			206,000
Benefit/cost ratio <sup>d</sup>			1.2

<sup>a</sup> Basic assumptions: (1) October 2002 price level; (2) 50-year project life; (3) FY 03, 5-7/8% interest

<sup>b</sup> Cost sharing reflects provisions of the Water Resources Development Act of 1986 – non-Federal initial share 10% of GNF plus reimbursement of 10% GNF minus LERR credit

<sup>c</sup> Betterments includes expansion of the south breakwater to a one-lane causeway, one-lane bridge, and sheetpile dock.

<sup>d</sup> Net annual NED benefits and BCR based on a deflated project cost to a price level of Oct 1999.

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## APPENDICES

### Appendix A: Cost Estimates

## CONVERSION TABLE FOR SI (METRIC) UNITS

Units of measurement used in this report can be converted to SI (metric) units as follows:

Multiply	By	To obtain
cubic yards	0.7646	cubic meters
acre	0.4049	hectare
Fahrenheit degrees	*	Celsius degrees
feet	0.3048	meters
feet per second	0.3048	meters per second
inches	2.5400	centimeters
knots (international)	0.5144	meters per second
miles (U.S. statute)	1.6093	kilometers
miles (nautical)	1.8520	kilometers
miles per hour	1.6093	kilometers per hour
pounds (mass)	0.4536	kilograms

To obtain Celsius (C) temperature readings from Fahrenheit (F) readings, use the following formula:  $C = (5/9)(F - 32)$ .

## **1.0 INTRODUCTION**

### **1.1 Study Authority**

The feasibility study was recommended in a May 1998 Reconnaissance Report by the Alaska District, U.S. Army Corps of Engineers, entitled “False Pass Navigation Improvements.” This study is in partial response to the Rivers and Harbors in Alaska study resolution, adopted by the U.S. House of Representatives, Committee on Public Works, on December 2, 1970.

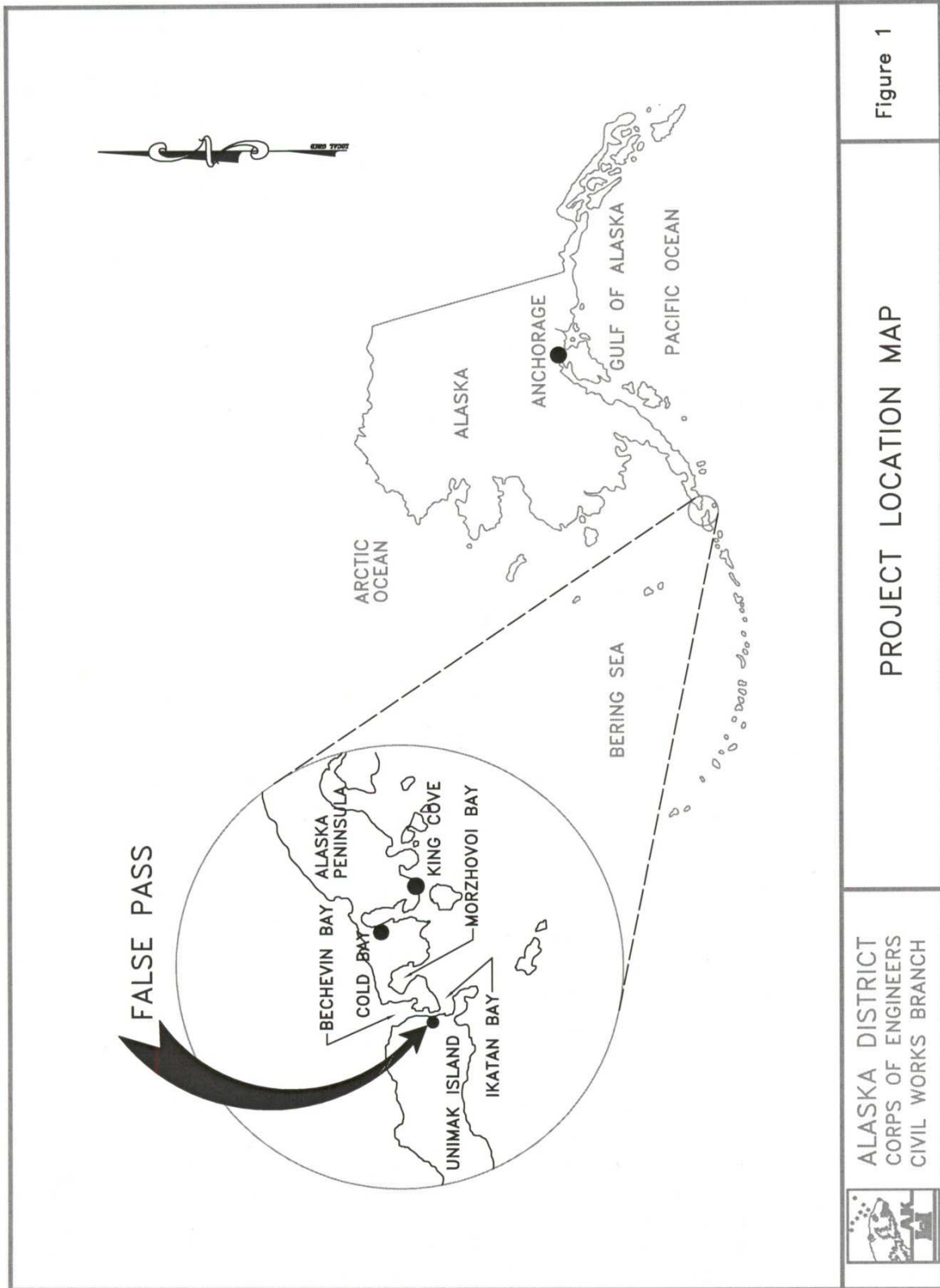
This reevaluation study was authorized by Public Law 106-541, Water Resources Development Act of 2000 in accordance with the Chief of Engineers Report, dated December 29<sup>th</sup>, 2000. The project as currently authorized provides navigation improvements at a total cost of \$15,552,000, with an estimated Federal cost of \$9,374,000 and an estimated non-Federal cost of \$6,178,000. This study was required to resolve HQUSACE policy compliance review comments that were postponed from the feasibility phase until the preconstruction, engineering, and design (PED) phase.

### **1.2 Scope of Reevaluation Study**

This study reevaluates the selection of the design vessel and entrance channel depth of the authorized Federal project. The regional and immediate areas of False Pass are shown on Figures 1 and 2. The study was limited to the authorized project and was conducted in accordance with goals and procedures for water resources planning as contained in Engineer Regulation 1105-2-100. A determination of modification of the authorized project and continued Federal interest, in accordance with present laws and policies is included. Reformulation of project alternatives was not included in this study.

### **1.3 Study Participation**

The Alaska District, Corps of Engineers, has primary responsibility for this study. The report was prepared with assistance from many individuals and agencies, especially the city of False Pass, the Aleutians East Borough (AEB), and the Alaska Department of Transportation and Public Facilities (ADOT&PF).





## 1.4 Related Reports and Studies

The following studies have examined navigation improvements at False Pass.

“Final Interim Feasibility Report with Environmental Assessment”, December 2000. Prepared by the U.S. Army Corps of Engineers, Alaska District. This study investigated and recommended construction of a small boat harbor at False Pass, Alaska.

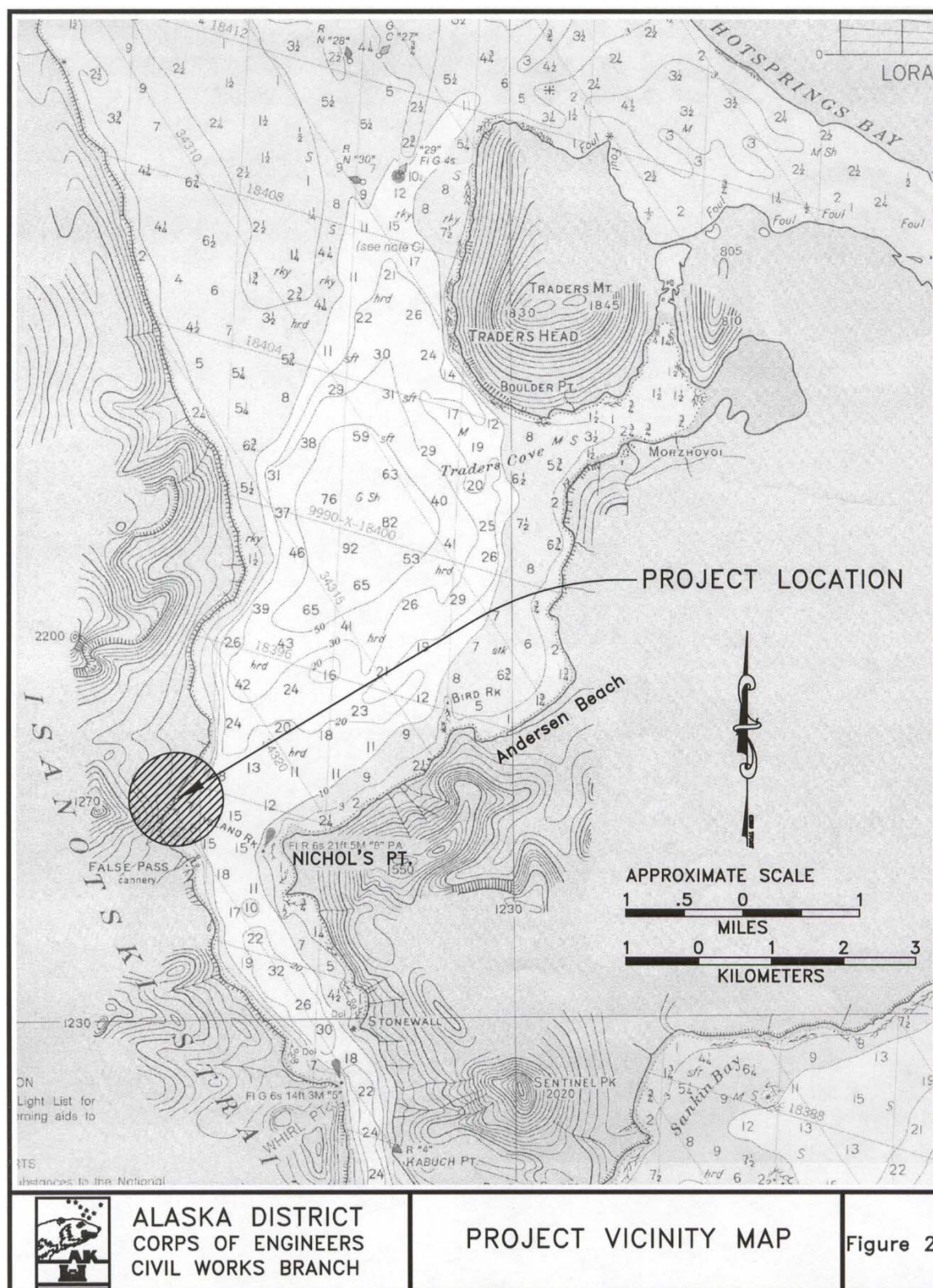
“Fleet Survey Project”, dated 1997. Prepared by Northern Economics in association with ResourceEcon.

“Wave Environment at False Pass”, November 1990. Prepared by Peratovich, Nottingham & Drage Inc. (PN&D) for the Aleutians East Borough. The report consists of a wind and wave study performed as part of the design of the city dock, which was constructed in 1992.

“False Pass Harbor Feasibility Study”, February 1985. Prepared by Robertson & Associates for the Alaska Department of Transportation and Public Facilities. This report examined several alternatives for the construction of a rubblemound breakwater structure, public dock, and associated support facilities, which were to be located in the small cove in front of the community of False Pass.

“Dock and Marine Industrial Facility Feasibility Analysis”, July 1989. Prepared by Ott Engineering Inc. for the Aleutians East Borough. Several dock and harbor alternatives were examined in this report as part of an economic and engineering study of the communities of False Pass, Akutan, Cold Bay, and Nelson Lagoon.

“Interim Letter Report, Navigation Improvements for Bottom Fishing”, July 1985. Prepared by the U.S. Army Corps of Engineers, Alaska District. This study investigated dredging and channel improvement aids for improving the natural navigation channel from Isanotski Strait through Bechevin Bay and its outlet to the Bering Sea (False Pass). While not harbor related, it provides a basis of understanding for ocean currents, winds, waves, and sediment transport in the study area.



## **2.0 AUTHORIZED PROJECT**

### **2.1 Authorized Project (Recommended Plan)**

During the feasibility study NED and LPP plans were developed. The LPP combined the features of the NED plan with the addition of several betterments, which were added at 100 percent cost to the sponsor. The RECOMMENDED PLAN, which became the authorized project, is shown on figure 3. The annual benefits of the RECOMMENDED PLAN were \$1,165,000 and the annual cost was \$1,000,000. Net annual benefits were estimated to be \$165,000 and the benefit to cost ratio was 1.2.

Major construction items of the authorized project include breakwaters, dredging, inner harbor facilities in addition to betterments, which include expansion of the south breakwater to a causeway, sheetpile dock, and bridge. A bridge would be required to access the causeway from the upland due to the gap created by the detached breakwater.

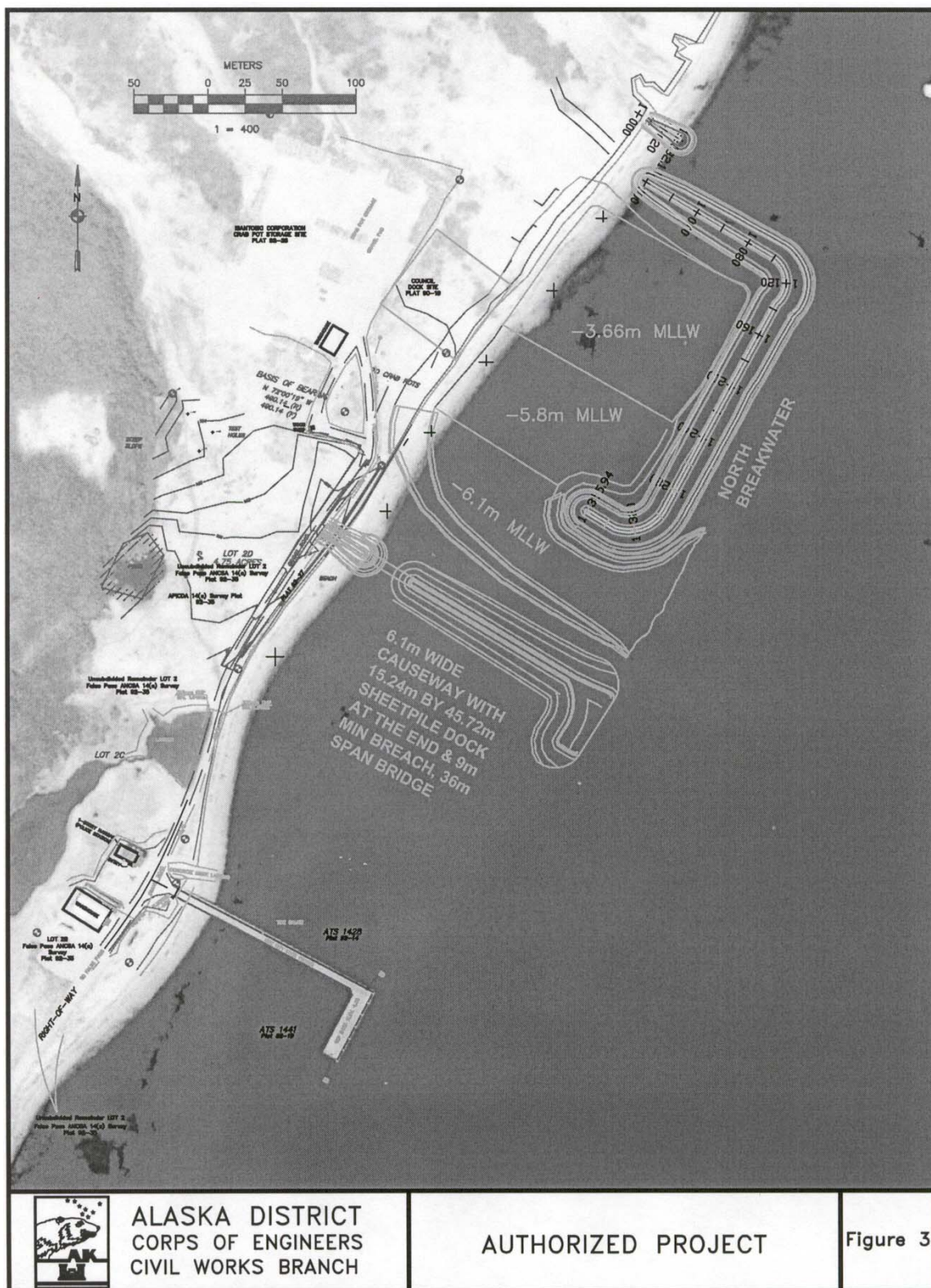
The 388 m-long north rubblemound breakwater will protect the basin from waves from the northeast and east. The 180 m-long south rubblemound breakwater would form the southern limit of the entrance channel.

The project would accommodate a fleet of 88 vessels in a 2.1 ha basin protected by the breakwaters. The mooring basin can accommodate boats ranging in size from 5.5 m to 30.5 m. The entrance depth is -6.1 m MLLW. Basin depths would range from -5.8 to -3.7 m MLLW. Dredged material would be disposed of offshore approximately 4.8 km from the proposed harbor in a designated deep-water disposal site.

### **2.2 Environmental Considerations**

An Environmental Assessment was prepared during the feasibility study and a Finding of No Significant Impact (FONSI) was signed on 29 September 2000. The assessment concluded that the False Pass navigation improvements could be constructed with no significant effect on the quality of the environment. The majority of impacts would be minor and of short duration. The project is consistent with state and Aleutians East Borough coastal management programs to the maximum extent practical. The mitigation plan was coordinated with resource agencies including U.S. Fish and Wildlife Service, National Marine Fisheries Service, and Alaska Department of Fish and Game. The mitigation plan is provided in the feasibility report.





## 2.3 Authorized Project Cost

Project costs based on an October 1999 price level are shown in Table 1. Details of the cost apportionment are provided in the December 2000 feasibility report.

**Table 1. Total Cost for NED and LPP (Recommended Plan)**

<i>Total Project Cost (\$000)</i>		
Item	NED Plan	LPP (Recommended Plan)
General Navigation Features (GNF)	10,426	10,426
LERR (GNF) - Acquisition credit	170	170
Aids to navigation	12	12
Local Service Facilities	2,239	2,239
Betterments (100% locally funded)	-----	2,705
<b>FINAL INITIAL COST REQUIREMENTS</b>	<b>12,847</b>	<b>15,552</b>

## 2.4 LPP and NED Plan Benefits

Details of the economic benefits of the navigation improvements at False Pass can be found in Appendix B of the feasibility report. A summary of the annual NED benefits is provided in Table 2.

**Table 2. Summary of Annual Benefits**

*(October 1999 price level)*

Benefit Category	Annual Benefit (\$)
Commercial Salmon Vessels	863,000
Subsistence Activities	48,000
Crab Vessel Operation	254,000
<b>TOTAL</b>	<b>1,165,000</b>

## 3.0 REEVALUATION OF LPP AND NED PLANS

### 3.1 Design Vessel Draft

Information on the drafts of crab vessels is sparse due to the great variety of vessels used in the fishery and because they are not required by law to report their draft. Crab vessels vary from large converted oil industry and flat-bottomed vessels to smaller deep V-hulled vessels. This is in contrast to vessels that operate on inland waterways. Vessels on inland waterways tend to have fewer classes and are more similar to each other.

Deep-sea merchant vessels of 150 gross tons or more are required to have plimsoll marks according to the Load Line Act of 1929. A plimsoll line or mark is a line or set of lines on the hull of a vessel that shows the depth to which it may legally be loaded. Flag states and the U.S. Coast Guard inspect merchant vessels. Vessels that fish for crab are not subject to mandatory inspection and are not required to have plimsoll marks. Enforceable provisions are limited to requirements for safety equipment such as lifeboats and survival suits. Those familiar with crab vessels, such as fishery resource managers and U.S. Coast Guard personnel, state that crab vessels very rarely have any type of marks on the hull.

Harbor staffs sometimes collect information on vessel drafts. Information on vessel drafts for crab vessels using King Cove harbor was used in this analysis. Alaska Department of Fish & Game (ADF&G) registration and tank inspections for the Bering Sea crab fisheries occur just prior to the season openings in Dutch Harbor, Akutan, King Cove, and Saint Paul. Vessels travel to these areas depending on where they are coming from, which Bering Sea fishery they will be going to, and to which fish processor they have the closest relationship. Vessels registering with ADF&G at King Cove will usually fish in the Bering Sea and use False Pass to cross into the Bering Sea. A listing of vessels by name was provided by the King Cove harbormaster to the economic consultant Northern Economics in December 1999 and was crosschecked against a January 2001 transit moorage list provided to the Corps of Engineers, Alaska District. A total of 15 vessels were found on both lists. These vessels were used to represent the distribution of drafts for crab vessels transiting False Pass and calling on the harbor. The average draft for these vessels is 3.66 m, which was used as the design vessel draft. The names of these vessels and the estimated draft in feet are presented in Table 3.

Information regarding whether or not the vessel is loaded or unloaded is not a consideration. According to maritime engineers familiar with design of crab vessels that operate in the Bering Sea and in addition to vessel operators there will be little difference in the draft of a crab vessel transiting from the Pacific to the Bering Sea through the False Pass versus one going in the opposite direction. In the first case the vessel hulls will be loaded (tanked) with seawater for ballast, fuel, fresh water, and the deck loaded with crab pots. In the latter case the decks will be loaded with crab pots and the hulls loaded with product (crab).

**Table 3. Drafts of Representative Crab Vessels Transiting False Pass**

Vessel Name	Vessel Draft			Operating Draft <sup>a</sup>
	ft	ft (rounded)	m	
Last Frontier	8	8	2.44	3.77
Entrance Point	8	8	2.44	3.77
Diamond Head	9	9	2.74	4.07
Kona Kai	9	9	2.74	4.07
Tuxedni	10.1	10	3.05	4.38
McKinley	10.8	11	3.35	4.68
Secret Island	11	11	3.35	4.68
Lady Black	11.4	11	3.35	4.68
Aquila	12.5	12	3.66	4.99
Stormy Sea	12.5	12	3.66	4.99
Aleutian Rover	13.1	13	3.96	5.29
Mary J	13.2	13	3.96	5.29
Siberian Sea	14	14	4.27	5.60
Kiska Sea	14	14	4.27	5.60
Oceanic	14.1	14	4.27	5.60

<sup>a</sup> For determination of the operating draft see Section 3.2

### 3.2 Entrance Channel Depth

The vessel operating draft equals the vessel draft plus 1.33 m of additional depth for operating and safety requirements. The estimated extreme low tide level at False Pass is -0.5 m, MLLW. Accounting for the extreme low water level results in an underkeel clearance of 1.83 m as shown in Table 4. Vessel operating drafts are shown in Table 3.

**Table 4. Operating and Safety Requirements and Tide Allowance**

Design Parameter	Depth requirement (m)
Pitch, roll, and heave	0.61
Squat	0.12
Safety clearance	<u>0.60</u>
	1.33
Tide allowance	<u>0.50</u>
	1.83

Based on the revised design vessel draft, the entrance channel depth was reduced from -6.10 to -5.49 m, MLLW, as shown in Table 5. This revised depth of -5.49 m was later revised to -5.8 m during optimization of the channel, as shown in Section 3.6. Channel design parameters were reevaluated and were considered reasonable and were not changed.

**Table 5. Determination of Entrance Channel Depth**

Design Parameter	Feasibility Report		Limited Reevaluation Report	
	Depth (m)	Depth (ft)	Depth (m)	Depth (ft)
Operation and safety plus tide allowance	1.83	6.0	1.83	6.0
Vessel draft	<u>4.27</u>	<u>14.0</u>	<u>3.66</u>	<u>12.0</u>
Entrance Channel Depth	6.10	20.0	5.49	18.0

### 3.3 Physical Comparison of Feasibility and LRR Alternatives

A comparison of the alternatives is provided in Table 6. Features of these alternatives remain the same between the two studies with the exception of the entrance channel and maneuvering basin depths and dredge volumes.

**Table 6. Comparison Of Alternatives: Physical Characteristics**

	Feasibility Report Alternatives		LRR Alternatives	
	Alternative 1-C NED Plan	Alternative 1-E* (LPP and Recommended Plan)	Alternative 1-C NED Plan	Alternative 1-E* (LPP and Recommended Plan)
Entrance channel depth	-6.1 m, MLLW	-6.1 m, MLLW	-5.8 m, MLLW	-5.8 m, MLLW
Dredged area (ha)	1.4	1.4	1.4	1.4
Dredged quantities (m <sup>3</sup> )	38,000	38,000	32,000	32,000
Maneuvering basin	-5.8 m MLLW	-5.8 m MLLW	-5.2 m MLLW	-5.2 m MLLW
Dredged quantity (m <sup>3</sup> )	38,000	38,000	36,000	36,000
Mooring basin (-3.7 m MLLW)				
Mooring area (ha)	2.1	2.1	2.1	2.1
Dredged area (ha)	2.6	2.6	2.6	2.6
Dredged quantities (m <sup>3</sup> )	33,000	33,000	33,000	33,000
Entrance channel slope armoring				
Armor quantities (m <sup>3</sup> ), W = 131 kg	1,500	1,500	1,500	1,500
Filter layer quantities (m <sup>3</sup> ), W = 13 kg	700	700	700	700
South breakwater				
Breakwater area (ha)	0.6	0.9	0.6	0.9
Breakwater length (m)	179	180	179	180
Fill finish elevation (m, MLLW)	4	4	4	4
Dredged fill quantity (m <sup>3</sup> )	-	4,600	-	4,600
Core quantities (m <sup>3</sup> )	7,600	2,200	7,600	2,200
Secondary (B) quantities (m <sup>3</sup> )	4,600	5,000	4,600	5,000
Armor quantities (m <sup>3</sup> ), W <sub>50</sub> = 1304 kg	8,000	7,900	8,000	7,900
Crushed gravel (m <sup>3</sup> )	-	700	-	700
Quarry Spalls (m <sup>3</sup> )	-	20,900	-	20,900
North breakwater				
Breakwater area (ha)	1.2	1.2	1.2	1.2
Breakwater length (m)	388	388	388	388
Fill finish elevation (m, MLLW)	4	4	4	4
Core quantities (m <sup>3</sup> )	21,600	21,600	21,600	21,600
Secondary (B) quantities (m <sup>3</sup> )	10,600	10,600	10,600	10,600
Armor quantities (m <sup>3</sup> ), W <sub>50</sub> = 1304 kg	14,800	14,800	14,800	14,800

\*Locally-preferred option includes betterments of fill material on south breakwater (causeway), sheetpile dock, and one-lane bridge.

### 3.4 Economic Considerations

For this study, the previous economic analyses were reviewed and determined to remain valid for use in this study. Optimization of the entrance channel for the revised design vessel draft resulted in the annual NED benefits being reduced from \$1,165,000 to \$1,164,000 as shown in Section 3.6.



### 3.5 Selection of Optimum Harbor Size

The harbor size was optimized during the feasibility report phase. Project conditions during the preparation of this report did not warrant reoptimization of the basin.

### 3.6 Optimization of Entrance Channel and Moorage Basin Depth

The largest salmon vessels expected to call on False Pass are 17.7 m in length, with an operating draft estimated to be 2.82 m. Salmon vessel operations are not constrained by entrance channel depths of 5.18 m or more and were not considered in the optimization. Large crab/tender vessels have drafts that range from 2.44 to 4.27 m with operating drafts of 4.27 to 6.10 m and were used as the basis for the optimization. The percent distribution of these vessels is shown in Table 7.

**Table 7. Representative crab vessels-percentage at given design and operating draft**

Vessel draft (m, MLLW)	Vessel operating draft (m)	Number of vessels in class (15 total)	Percent of Vessels
≤ 3.05	≤ 4.38	5	33
> 3.05 to < 3.66	> 4.38 to < 4.99	3	20
≥ 3.66 to ≤ 3.96	≥ 4.99 to ≤ 5.29	4	27
> 3.96	> 5.29	3	20

#### 3.6.1 Tidal Variation

The actual depth available at the entrance channel will vary with the tides. The percent of time that the alternative entrance channel depths can be used by vessels of various drafts is shown on Table 8.

**Table 8. Percent of Time Entrance Channel is Passable**

Channel Depth (m, MLLW)	Vessel Operating Draft plus Tide Allowance of 0.5 m			
	≤ 4.88	> 4.88 to < 5.49	≥ 5.49 to ≤ 5.79	> 5.79
5.18	100	97.5	88.9	75.9
5.49	100	100	97.5	88.9
5.79	100	100	100	97.5
6.10	100	100	100	100

#### 3.6.2 Crab Vessel Benefits for Alternative Entrance Channel Depths

Some crab vessels will not be able to enter the harbor at all tide levels depending on their operating draft and depth of the entrance channel. Benefits attributed to crab vessel operations in the feasibility economic analysis included operating and opportunity cost of time saving for vessels and crews as they use protected moorage while waiting out unfavorable conditions at the entrance to the Bering Sea. Average annual crab vessel benefits are \$253,876.

The average annual crab vessel benefits were apportioned by draft as shown in Table 9. The benefits were then reduced by the percent time, which the entrance channel was passable for the differing vessels drafts as shown in Table 10. Optimization of the

entrance channel shows that the net NED benefits are maximized at a depth of -5.79 m, MLLW (rounded to -5.8) as shown in Table 11.

**Table 9. Benefits Apportioned by Vessel Draft**

Vessel operating draft (m)	Percent of vessels	Apportioned NED crab vessel benefits (total NED crab vessel benefits X % of crab vessels)	
≤ 4.38	33	\$ 253,875 X 0.33	\$ 83,779
> 4.38 to < 4.99	20	\$ 253,875 X 0.20	\$ 50,775
≥ 4.99 to ≤ 5.29	27	\$ 253,875 X 0.27	\$ 68,547
> 5.29	20	\$ 253,875 X 0.20	\$ 50,775

**Table 10. Apportioned NED Benefits Adjusted for Entrance Channel Passability**

Channel depth (m, MLLW)	Vessel operating draft (m)				Average annual benefits	Incremental average annual benefits
	≤ 4.38	> 4.38 to < 4.99	≥ 4.99 to ≤ 5.29	> 5.29		
5.18	\$ 83,779	\$ 49,506	\$ 60,938	\$ 38,538	\$232,761	-
5.49	83,779	50,775	66,833	45,139	246,526	\$ 13,765
5.79	83,779	50,775	68,547	49,506	252,607	6,080
6.1	83,779	50,775	68,547	50,775	253,875	1,269

**Table 11. Net NED benefits for Various Channel Depths**

Channel Depth (m MLLW)	First Cost of Channel Dredge (\$) (Oct 2002)	First Cost of Channel Dredge (\$) (Oct 1999)	Annual Project Cost (\$)	Annual NED Benefit (\$)	Net NED Benefit (\$)
-5.18	\$ 315,485	\$ 297,479	\$ 20,539	\$232,761	\$212,222
-5.49	342,827	323,261	22,319	246,526	\$224,207
-5.79	381,848	360,055	24,859	252,607	\$227,748
-6.10	434,705	409,895	28,301	253,876	\$225,575

### 3.6.3 Revised NED Benefits

Optimization of the entrance channel resulted the annual NED benefits attributed to crab vessels being reduced from \$254,000 to \$253,000 (rounded from \$253,876 and \$252,607). This resulted in the total annual NED benefits being reduced from 1,165,000 to 1,164,000 as shown in table 12.

**Table 12. Summary of Annual Benefits**

Benefit Category	Annual Benefit (\$)
Commercial Salmon Vessels	863,000
Subsistence Activities	48,000
Crab Vessel Operation	253,000
<b>TOTAL</b>	<b>1,164,000</b>

### **3.7 Environmental Considerations**

The revised project depth of -5.8 m, formerly -6.1 m, MLLW will have no impact on the environmental conclusions drawn from the EA and FONSI. Therefore, a supplemental EA and FONSI were not prepared.

### **3.8 Affirmation of NED and LPP Plans**

Reduction of the design vessel draft and project depth had minimal effect on the NED benefits and project cost. The reduced channel depth offset escalation of the project cost. Net annual NED benefits increased by \$41,000 and the benefit to cost ratio remained 1.2.

The LPP, which provided the same NED benefits and project costs with the addition of locally funded betterments, was affirmed as the Recommended Plan. The NED plan and LPP are discussed in more detail in Section 4.

## **4.0 DESCRIPTION OF CURRENT RECOMMENDED PLAN**

### **4.1 Plan Components**

Major construction items of the Recommended Plan include breakwaters, dredging, inner harbor facilities in addition to the betterments, which include expansion of the south breakwater to a causeway, sheetpile dock, and bridge. The causeway and dock would allow deep-draft barges to load and unload goods from upland facilities. A bridge would be required to access the causeway from the upland due to the gap created by the detached breakwater. The NED and Recommended Plans are shown in figures 4 and 5, respectively.

#### **4.1.1 Rubblemound Breakwaters**

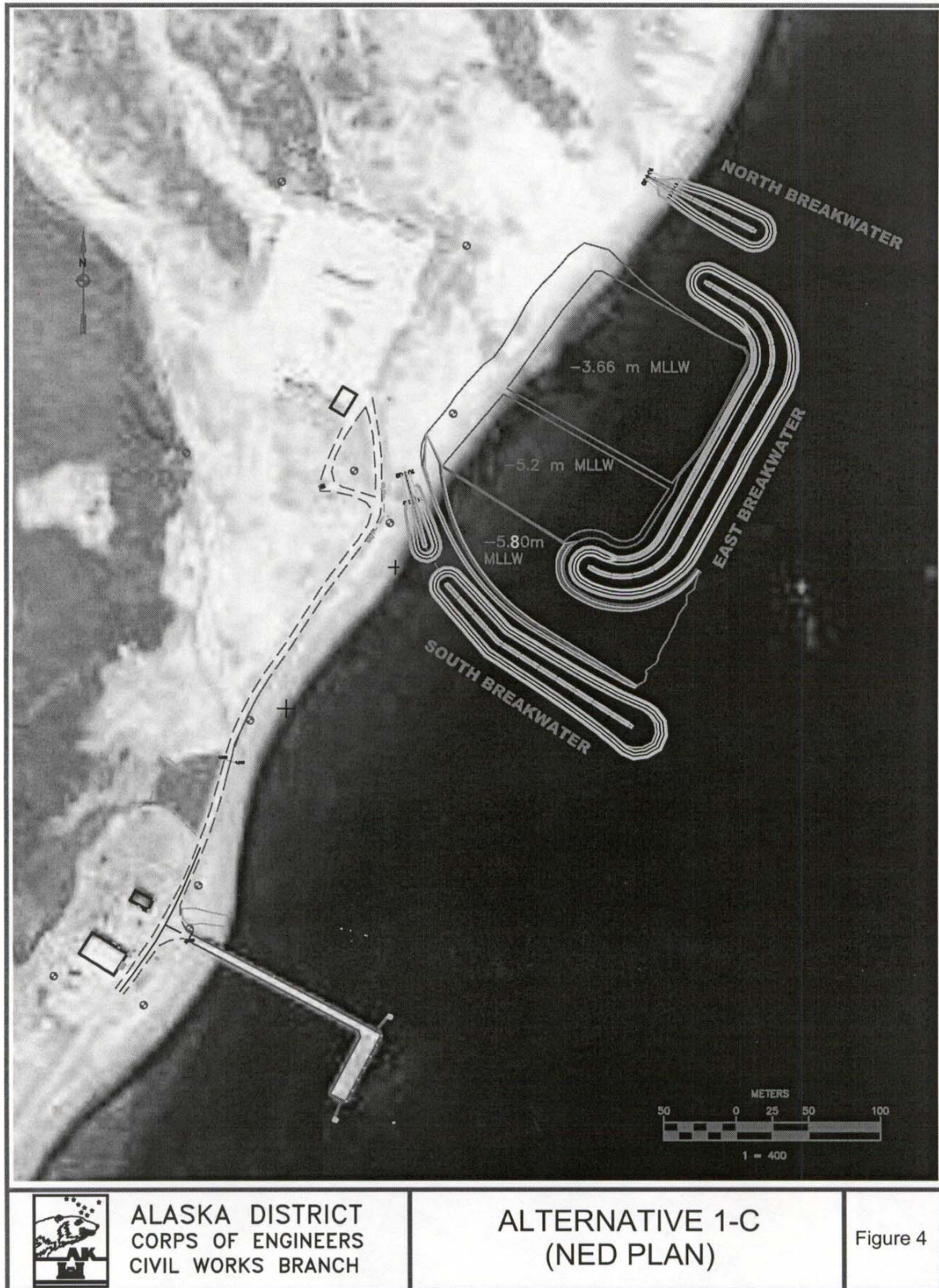
The 388 m-long north rubblemound breakwater will protect the basin from waves from the northeast and east. The 180 m-long south rubblemound breakwater would form the southern limit of the entrance channel. The breakwaters will have a crest elevation of 4.0 m MLLW and a crest width of 2.4 m to 10 m.

#### **4.1.2 Channels and Basin**

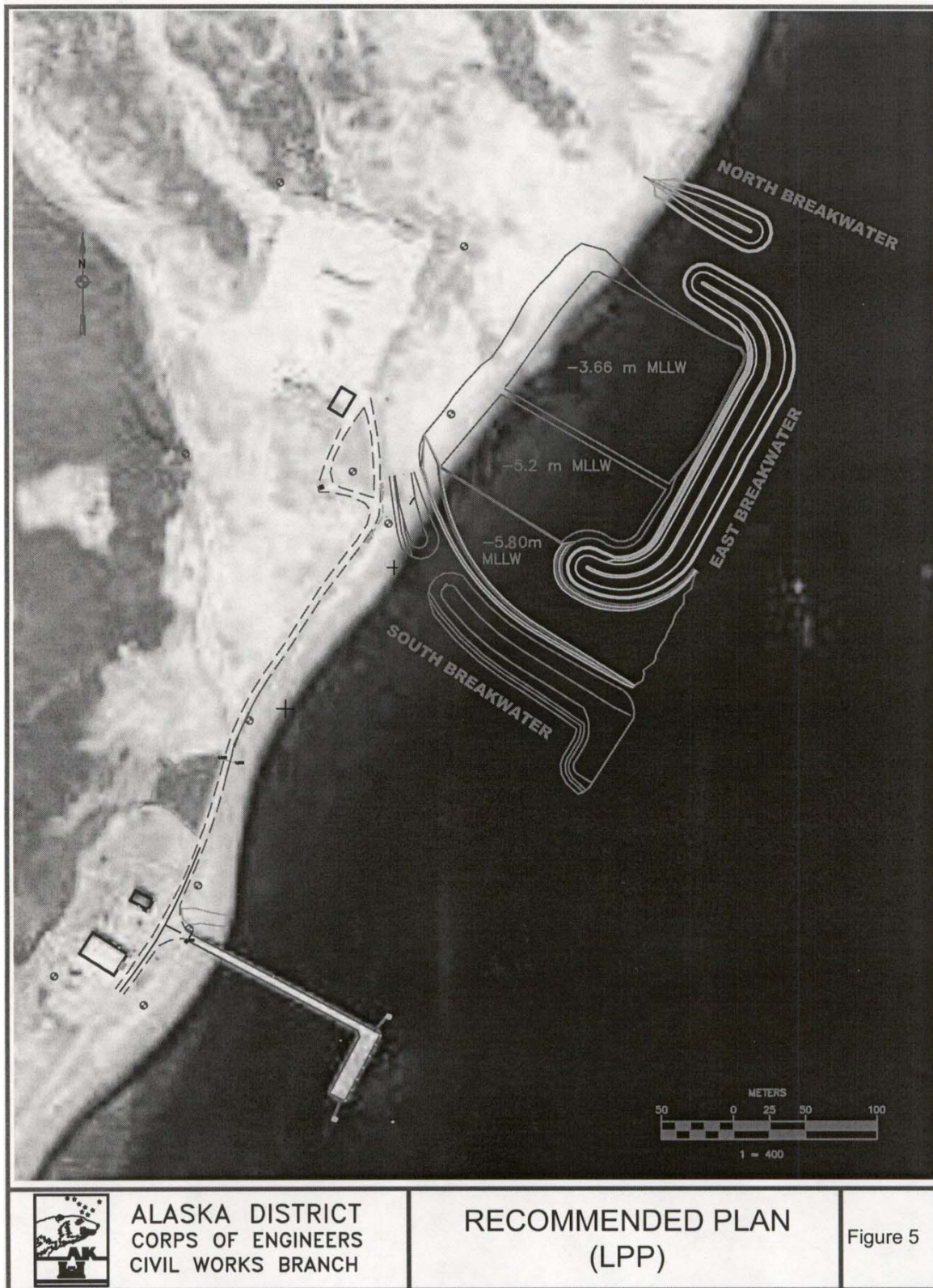
The project would accommodate a fleet of 88 vessels in a 2.1 ha basin protected by the breakwaters. The entrance channel would be 30 m wide, which is three times the design beam width of the longest boat at 30.5 m. The entrance channel width allows for one-way traffic and will be sufficient for larger vessels equipped with bow thrusters. The entrance channel depth will be -5.8 m MLLW. Basin depths would range from -5.2 m MLLW near the entrance channel to -3.7 m MLLW at the far end of the basin.

#### **4.1.3 Disposal of Dredged Material**

The dredged material is expected to consist primarily of sand and gravel. Dredged material would be a total of 101,000 m<sup>3</sup>. Minimal maintenance dredging is expected during the life of the project. Approximately 5000 m<sup>3</sup> would be used for construction of the causeway portion of the south breakwater. The remaining 96,000 m<sup>3</sup> of dredged material would be disposed of approximately 4.8 km offshore in a designated deep-water disposal site. The disposal area has depths of up to 165 m and would provide adequate capacity for at least 20 years of maintenance dredging.







## 4.2 Plan Costs

Interest during construction (IDC) was added to the initial cost to account for the opportunity cost incurred during the time after the funds have been spent, but before the benefits begin to accrue. IDC was calculated by matching the construction expenditure flow with the interest the funds would have accumulated had they been deposited in an interest-bearing account. Preconstruction, engineering, and design (PED) was assumed to take nine months. Construction was expected to last for 24 months. For this analysis, level monthly expenditures were assumed.

The initial costs for the NED and Recommend Plans are shown on tables 13 and 14. Detailed M-CACES cost estimates are shown in Appendix A. Initial cost of the NED plan is \$13,005,000, excluding \$12,000 for navigational aids to be provided by the U.S. Coast Guard. Interest on the P&S for nine months at 5 7/8 percent was calculated as \$13,000 and added to the initial cost before the IDC was calculated. The IDC for the initial cost is \$773,000. The initial cost plus IDC equals \$13,778,000, which is the total investment cost. With the annual operation and maintenance cost of \$54,000, the total annual NED investment cost is \$913,000. Initial cost of the Recommended Plan, including the sponsor cost of P&S and S&A for the betterments is \$15,751,000. This cost includes \$2,734,000 for the betterments at 100 percent sponsor cost.

## 4.3 Plan Benefits

NED benefits from the NED and Recommended Plans are \$1,164,000 and are presented in Table 12. Net annual benefits are \$206,000 with a benefit to cost ratio of 1.2.

## 4.4 Risk and Uncertainty

Because of the limited scope of this report, a risk and uncertainty analysis was not performed. However, a risk and uncertainty analysis was included in Appendix B of the feasibility report and remains unchanged for this report.

## 4.5 Plan Accomplishment

The Recommended Plan would meet the planning objectives for False Pass in the following ways:

- Provide protected permanent moorage for local commercial and subsistence fleet operations.
- Provide protected transient moorage for transient Area M salmon vessels using False Pass as a staging area.
- Provide protected transient moorage to crab/tender and other vessels transiting from the Pacific Ocean/Gulf of Alaska to the Bering.
- Preserve environmental resources to the maximum level consistent with maximizing the net NED benefits and other objectives.

**Table 13. Federal/Non-Federal Initial Cost Apportionment for NED Plan***(October 2002 price level)*

Items	Total Project Cost (\$000)	Implementation Costs (\$000)			
		Federal	%	Non-Federal	%
General Navigation Features (GNF):					
Entrance channel and maneuvering area	804	724		80	
Breakwaters	6,884	6,195		689	
Mobilization/demobilization	1,419	1,277		142	
Preconstruction, engineering, & design	643	579		64	
Construction management (S&A)	793	714		79	
LERR (GNF) – Federal administrative costs <sup>a</sup>	16	14		2	
Subtotal GNF	10,559	9,503	90	1,056	10
Additional Funding Requirement					
10% of GNF		-1,056		1,056	
GNF LERR credit <sup>b</sup>		198		-198	
Adjustment for GNF LERR credit		-858		858	
Subtotal of GNF Related Items	10,559	8,645		1,914	
LERR (GNF) - Acquisition credit	198	0	0	198	100
Aids to navigation	12	12	100	0	0
Local Service Facilities					
Mooring basin and disposal	362	0		362	
Floats	1,699	0		1,699	
LERR (LSF)	187	0		187	
TOTAL LOCAL SERVICE FACILITIES	2,248	0	0	2,248	100
ULTIMATE FIRST COST REQUIREMENTS	13,017	8,657		4,360	

<sup>a</sup> The 10% of Federal GNF LERR administrative cost is apportioned to the sponsor only to establish the total Federal and non-Federal costs.

<sup>b</sup> GNF LERR credit includes the local sponsor's administrative and acquisition costs for the GNF LERR.



**Table 14. Federal/Non-Federal Initial Cost Apportionment for LPP (Recommended Plan)***(October 2002 Price Level)*

Items	Total Project Cost (\$000)	Implementation Costs (\$000)			
		Federal	%	Non-Federal	%
General Navigation Features (GNF):					
Entrance channel and maneuvering area	804	724		80	
Breakwaters	6,884	6,195		689	
Mobilization/demobilization	1,419	1,277		142	
Preconstruction, engineering, and design	643	579		64	
Construction management	793	714		79	
LERR (GNF) – Federal administrative costs <sup>a</sup>	16	14		2	
Subtotal GNF	10,559	9,503	90	1,056	10
Additional Funding Requirement					
10% of GNF		-1,056		1,056	
GNF LERR credit <sup>b</sup>		198		-198	
Adjustment for GNF LERR credit		-858		858	
Subtotal of GNF Related Items	10,559	8,645		1,914	
LERR (GNF) - Acquisition credit	198	0	0	198	100
Aids to navigation	12	12	100	0	0
Local Service Facilities					
Mooring basin and disposal	362	0		362	
Floats	1,699	0		1,699	
LERR associated with LSF	187	0		187	
TOTAL LCOAL SERVICE FACILITIES	2,248	0	0	2,248	100
Betterments					
Widening of south breakwater	856	0		856	
One-lane bridge	798	0		798	
Sheetpile dock	866	0		866	
Preconstruction engineering and design	107	0		107	
Construction management	107	0		107	
TOTAL BETTERMENTS COST	2,734	0	0	2,734	100
ULTIMATE FIRST COST REQUIREMENTS	15,751	8,657		7,094	

<sup>a</sup> The 10% of Federal GNF LERR administrative cost is apportioned to the sponsor only to establish the total Federal and non-Federal costs.

<sup>b</sup> GNF LERR credit includes the local sponsor's administrative and acquisition costs for the GNF LERR.

## 4.6 Plan Implementation

### 4.6.1 Construction

**Federal.** The Corps of Engineers would be responsible for construction of the breakwaters, entrance channel, and maneuvering basin. The U.S. Coast Guard would be responsible for installing aids to navigation.

**Local.** The sponsor would be responsible for excavating the mooring basin, constructing the float system, and providing all lands, easements, and rights-of-way necessary for the project. The sponsor would also be responsible for utility service to the harbor and for funding its share of the general navigational features. The sponsor is also responsible for the cost of all betterments including a proposed sheetpile dock, bridge over the breakwater gap, and converting the south breakwater to a causeway.

### 4.6.2 Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRRR)

**Federal.** The Corps of Engineers would maintain the breakwaters and channels and conduct periodic hydrographic surveys to determine if or when maintenance dredging is required. The U.S. Coast Guard would maintain navigational aids. Table 15 indicates OMRRR intervals and costs.

**Local.** The local sponsor would perform maintenance dredging of the mooring basin if necessary, maintain the floats, utilities, etc., and operate the completed project. The local sponsor may use dredged material for approved fill activities or other construction activities.

**Table 15. Annual Costs of OMRRR**

	Interval (yr)	Equivalent Annual Cost (\$)			
		Corps	Other Federal	Local Sponsor	Total
Maintenance Dredging, 1 event	25	8,500			8,500
Replace 2% armor on breakwater	15	2,500			2,500
Hydrographic surveys	5	5,000			5,000
Maintain navigation aids	5		1,000		1,000
Maintain floats, stalls, and piles	1			10,000	10,000
Replace floats, stalls, and piles	40			10,000	10,000
Harbormaster, full-time for ½ year	1			17,000	17,000
<b>TOTAL OMRRR COSTS</b>		<b>16,000</b>	<b>1,000</b>	<b>37,000</b>	<b>54,000</b>

### 4.6.3 Real Property Interests

Real property interests remain unchanged from the feasibility report. The sponsor will be required to provide all lands, easements, and rights-of-way necessary for construction of the project. The project's real estate costs for both Federal and non-Federal portions were updated from the feasibility report and are provided in Table 16. More details on the real property interests can be found in Section 5.6.3 of the feasibility report.

**Table 16. Real Estate Costs**

Item	Federal (\$)	Local (\$)	Subtotal (\$)	Total (\$)
Federal project portions (GNF)				
Administration	16,000	25,000	41,000	
Lands	0	173,000	173,000	214,000
Non-federal project portions				
Administration	0	16,000	16,000	
Lands	0	171,000	171,000	187,000

#### 4.6.4 Cost Apportionment

Construction costs for the project would be apportioned in accordance with the Water Resources Development Act of 2000. The fully funded cost apportionment for the project features is summarized in Table 17.

**Table 17. Apportionment Of Construction Costs**

Portion of project	Construction cost contribution (%)	
	Federal	Local
General navigation features (includes entrance channel, maneuvering basin, and breakwaters)	80	20 <sup>a</sup>
Local features (includes floats and mooring basin)	0	100
Coast Guard navigation aids	100	0

<sup>a</sup>Non-federal interests must provide cash contributions toward the costs for construction of the general navigation features (GNF) of the project, paid during construction (PDC) as follows: For project depths of up to 20 ft–10%; for project depths over 20 ft and up to 45 ft–25%, and for project depths exceeding 45 ft–50%. For all depths, they must provide an additional cash contribution equal to 10% of GNF costs (which may be financed over a period not exceeding 30 years), against which the sponsor's costs for LERR (except utilities) shall be credited. *Note:* Costs for general navigation features include associated costs, such as mobilization.

The sponsor is also responsible for 100 percent of the construction cost of the inner harbor facilities, which includes dredging the mooring area, and the betterments, which include modification of the south breakwater to form a one-lane causeway, a one-lane bridge, and sheetpile dock. Initial Federal and non-Federal costs the NED and Recommended plans are provided in tables 13 and 14.

The fully funded cost of the NED plan escalated to the mid-point of construction is estimated as \$14,079,000. The fully funded cost of the RECOMMENDED PLAN is \$17,032,000 and includes locally funded betterments.

The Federal Government would assume 100 percent of the operation and maintenance costs for the breakwater (except for the causeway portion of the breakwater, local dock, and bridge) and entrance channel. The sponsor would assume all other operation and maintenance costs and would be responsible for providing LERR for construction and future maintenance of the inner harbor facilities and betterments.

The initial GNF construction cost is 90 percent for the initial Federal investment and 10 percent for the initial local share because all dredging is less than 6.1 m (20 ft). The

sponsor must also contribute an additional 10 percent, plus interest, during a period not to exceed 30 years after completion of the general navigation features. The sponsor would be credited toward this 10-percent cost with the value of LERR necessary for construction, operation, and maintenance of the general navigation features. This post construction contribution is currently estimated at \$858,000 as shown in Table 18.

**Table 18. Post-Construction Contribution**

Total GNF	10 % of GNF	Maximum LERR Credit	Non-federal post construction contribution
\$10,559,000	\$1,056,000	\$198,000	\$858,000

#### **4.6.5 Financial Analysis**

An analysis of the Sponsor's financing capability was included in the feasibility study. The project cost for the revised recommended plan remains relatively unchanged. Therefore, a reanalysis on the sponsor's financing capability was not performed for this report.

#### **4.7 Public Involvement**

The community of False Pass, AEB, and ADOT&PF has worked closely with the Corps study team during the feasibility and reevaluation studies. Cooperation between the Corps and these local interests resulted in the selection of the NED and Recommended Plan. The community, AEB, and ADOT&PF have stated their preference for the revised Recommended Plan and agree that the project will function adequately with the reduced entrance channel depth.

#### **4.8 Consultation Requirements**

The feasibility study was coordinated with all relevant Federal and state agencies, including the U.S. Fish and Wildlife Service. Information on this coordination is provided in the Environmental Assessment. The project received an Alaska Coastal Management Program consistency determination and was issued a State Certificate of Reasonable Assurance under the Clean Water Act. A biological opinion was issued by the U.S. Fish and Wildlife Service outlining reasonable and prudent measures to protect the threatened Steller's eider.

Modification of the project depth will have no impact on the environmental conclusions of the EA. Therefore, additional consultation was not conducted for this reevaluation study.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusions

The studies documented in this report indicate that modification of the authorized Federal project at False Pass is warranted and justified. Construction of navigational improvements is technically feasible, economically justified, and environmentally and socially acceptable. The revised Recommended Plan reduces the project depth from -6.1 to -5.8 m, MLLW and the outermost maneuvering area from -5.8 to -5.2 m, MLLW. All other features remain the same. The Aleutians East Borough is willing to act as local sponsor for the project and fulfill all the necessary local cooperation requirements. Thus it is concluded that the Federal Government in cooperation with the Aleutians East Borough should pursue construction of the Recommended Plan.

### 5.2 Recommendations

I recommend that the navigational improvements at False Pass, Alaska, be constructed generally in accordance with the plan herein, and with such modifications thereof as in the discretion of the Chief of Engineers may be advisable at an estimated total Federal cost of \$8,657,000 and \$17,000 annually for Federal maintenance provided that prior to construction the local sponsor agrees to the following:

- A. Enter into an agreement which provides, prior to execution of the project cooperation agreement, 25 percent of the design costs;
- B. Provide, during construction, any additional funds needed to cover the non-federal share of design costs;
- C. The estimated non-federal initial costs for the general navigation features of the project is \$1,914,000 plus \$198,000 for GNF LERR and \$4,982,000 for local service facilities and betterments;
- D. Provide, operate, maintain, repair, replace, and rehabilitate, at its own expense, the local service facilities consisting of the new mooring basin, all moorage facilities in addition to the area designated as betterment on the north breakwater; in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and State laws and regulations and any specific directions prescribed by the Federal Government;
- E. Provide all lands, easements, rights-of-way, and perform or ensure the performance of all relocations determined by the Federal Government to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features (including all lands, easements, and rights-of-way, and relocations necessary for dredged material disposal facilities);
- F. Prepare and implement a harbor management plan to be coordinated with local interests. The harbor management plan shall incorporate best management practices to control water pollution at the project site;

- G.** Provide, during the period of construction, a cash contribution equal to the following percentages of the total cost of construction of the general navigation features (which include the construction of land-based and aquatic dredged material disposal facilities that are necessary for the disposal of dredged material required for project construction, operation, or maintenance and for which a contract for the federal facility's construction or improvement was not awarded on or before October 12, 1996;):
1. 10 percent of the costs attributable to dredging to a depth not in excess of 6.1 m (20 ft)
  2. 25 percent of the cost attributable to dredging to a depth in excess of 6.1 m (20 ft) but not in excess of 13.7 m (45 ft)
  3. 50 percent of the costs attributable to dredging to a depth in excess of 13.7 m (45 ft)
- H.** Pay with interest, over a period not to exceed 30 years following completion of the period of construction of the project, up to an additional 10 percent of the total cost of construction of general navigation features. The value of lands, easements, rights-of-way, and relocations provided by the non-Federal sponsor for the general navigation features, described below, may be credited toward this required payment. If the amount of credit exceeds 10 percent of the total cost of construction of the general navigation features, the non-Federal sponsor shall not be required to make any contribution under this paragraph, nor shall it be entitled to any refund for the value of lands, easements, rights-of-way, and relocations in excess of 10 percent of the total cost of construction of the general navigation features;
- I.** For so long as the project remains authorized, operate and maintain the local service facilities, and the dock at the end of the south breakwater causeway and provide lands, easements, and rights-of-way for any dredged or excavated material disposal areas, in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and state laws and regulations and any specific directions prescribed by the Federal Government;
- J.** Give the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-Federal sponsor owns or controls for access to the general navigation features for the purpose of inspection, and, if necessary, for the purpose of operating, maintaining, repairing, replacing, and rehabilitating the general navigation features;
- K.** Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project, any betterments, and the local service facilities, except for damages due to the fault or negligence of the United States or its contractors;
- L.** Keep, and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of 3 years after completion of the accounting for which such books, records, documents, and other evidence is required, to the extent and in such detail as will properly reflect

- total cost of construction of the general navigation features, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and local governments at 32 CFR, Section 33.20;
- M.** Perform, or cause to be performed, any investigations for hazardous substances as are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601-9675, that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, or rehabilitation of the general navigation features. However, for lands that the Government determines to be subject to the navigation servitude, only the Government shall perform such investigation unless the Federal Government provides the non-Federal sponsor with prior specific written direction, in which case the non-Federal sponsor shall perform such investigations in accordance with such written direction;
  - N.** Assume complete financial responsibility, as between the Federal Government and the non-Federal sponsor, for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features;
  - O.** To the maximum extent practicable, perform its obligations in a manner that will not cause liability to arise under CERCLA;
  - P.** Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987, and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way, required for construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;
  - Q.** Comply with all applicable Federal and state laws and regulations, including, but not limited to, Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 USC 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled “Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army”;
  - R.** Provide the non-Federal share of that portion of the costs of mitigation and data recovery activities associated with historic preservation, that are in excess of 1 percent of the total amount authorized to be appropriated for the project, in accordance with the cost sharing provisions of the agreement;

- S. Accomplish all removals determined necessary by the Federal Government other than those removals specifically assigned to the Federal Government;
- T. Do not use Federal funds to meet the non-federal sponsor's share of total project costs unless the Federal-granting agency verifies in writing that the expenditure of such funds is authorized.

The recommendations for implementation of navigation improvements at False Pass, Alaska reflect the policies governing formulation of individual projects and the information available at this time. They do not necessarily reflect the program and budgeting priorities inherent in the local and State programs or the formulation of a national civil works water resources program. Consequently, the recommendations may be changed at higher review levels of the executive branch outside Alaska before they are used to support funding.

A handwritten signature in dark ink, appearing to read "Steven T. Perrenot", with a stylized flourish at the end.

Steven T. Perrenot  
Colonel, Corps of Engineers  
District Engineer